

CLAIMS

1. A method for controlling transmission of data bits in a bit transfer session for transmitting data information from an application server (2) to a client (1),
5 said bit transfer session involving bit transfer over a wireless communications link by means of a transport protocol with a flow control mechanism **characterised by** the steps of:
a network entity (2, 4) receiving (32, 34), continuously throughout said session, information from a radio resource managing unit (6) about the
10 bandwidth on the wireless link that the bit transfer session currently is allowed to use; and
said network entity updating (35) at least one parameter relating to the flow control mechanism of the transport protocol in response to said received information, so as to control the transmission rate of the session in
15 accordance with said received information.
2. The method for controlling transmission of data bits according to claim 1 characterised by the network entity (2, 4) receiving said information from the radio resource managing unit each time the bandwidth on the wireless link
20 that the bit transfer session is allowed to use has changed.
3. The method for controlling transmission of data bits according to claim 1 characterised by the network entity (2, 4) receiving said information from the radio resource managing unit at predetermined intervals.
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4. The method for controlling transmission of data bits according to any of claims 1-3 characterised by said network entity being the application server (2).
- 30 5. The method for controlling transmission of data bits according to any of claims 1-3 characterised by said bit transfer session being set up between the application server (2) and the client (1) via a proxy (4) and by said network entity being the proxy.

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6. The method for controlling transmission of data bits according to claim 5 characterised by said proxy (4) sending acknowledgements of packets received from the application server (2) during said bit transfer session and by said acknowledgements being dependent on said received information
5 from the radio resource managing unit (6).

7. The method for controlling transmission of data bits according to any of the previous claims characterised by said network entity (2, 4) receiving said information from the radio resource managing unit (6) via the client (1).
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8. The method for controlling transmission of data bits according to any of the previous claims characterised by said transport protocol being TCP.

9. The method for controlling transmission of data bits according to claim 8 characterised by said at least one parameter being the TCP window size
15 and/or the TCP segment size.

10. The method for controlling transmission of data bits according to any of the previous claims characterised by the further step of transforming the data to be transmitted during the bit transfer session in response to said
20 received information from the radio resource managing unit (6).

11. The method for controlling transmission of data bits according to any of the previous claims characterised by updating said at least one parameter
25 such that the bandwidth on the wireless link that is utilized by the bit transfer session increases or decreases.

12. The method for controlling transmission of data bits according to any of the previous claims characterised by the radio resource managing unit being
30 a radio network controller (6).

13. The method for controlling transmission of data bits according to any of claims 1-11 characterised by the radio resource managing unit being a base station controller.

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14. Computer program product loadable into a memory of a digital computer device, including software code portions for performing the method of one of claims 1-13 when said computer program product is run on said computer device.

15. An apparatus for controlling transmission of data bits in a bit transfer session for transmitting data information from an application server (2) to a client (1), said bit transfer session involving bit transfer over a wireless communications link by means of a transport protocol with a flow control mechanism **characterised in that** the apparatus is included in a network entity (2, 4) and in that the apparatus includes:

reception means for continuously throughout said session receiving information from a radio resource managing unit (6) about the bandwidth on the wireless link that the bit transfer session currently is allowed to use; and

parameter setting means for updating at least one parameter relating to the flow control mechanism of the transport protocol in response to said received information, so as to control the transmission rate of the session in accordance with said received information.

16. The apparatus for controlling transmission of data bits according to claim 15 characterised in that said reception means is arranged to receive said information from the radio resource managing unit (6) each time the bandwidth on the wireless link that the bit transfer session is allowed to use has changed.

17. The apparatus for controlling transmission of data bits according to claim 15 characterised in that said reception means is arranged to receive said information from the radio resource managing unit (6) at predetermined intervals.

18. The apparatus for controlling transmission of data bits according to any of claims 15-17 characterised in that said reception means and said parameter setting means are included in the application server (2).

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19. The apparatus for controlling transmission of data bits according to any of claims 15-17 characterised in that said bit transfer session is set up between the application server (2) and the client (1) via a proxy (4) and in that said reception means and said parameter setting means are included in the proxy.

20. The apparatus for controlling transmission of data bits according to claim 19 characterised in the said proxy (4) is arranged to send acknowledgements of packets received from the application server (2) during said bit transfer session, which acknowledgements are dependent on said information from the radio resource managing unit (6).

21. The apparatus for controlling transmission of data bits according to any of claims 15-20 characterised in that said reception means are arranged to receive said information from the radio resource managing unit (6) via the client (1).

22. The apparatus for controlling transmission of data bits according to any of claims 15-21 characterised in that said transport protocol is TCP.

23. The apparatus for controlling transmission of data bits according to claim 22 characterised in that said at least one parameter is the TCP window size and/or the TCP segment size.

24. The apparatus for controlling transmission of data bits according to any of claims 15-23 characterised in that the apparatus further includes means for transforming the data to be transmitted during the bit transfer session in response to said information from the radio resource managing unit (6).

25. The apparatus for controlling transmission of data bits according to any of the claims 15-24 characterised in that said parameter setting means is arranged to update said at least one parameter such that the bandwidth on

the wireless link that is utilized by the bit transfer session increases or decreases.

26. The apparatus for controlling transmission of data bits according to any
5 of the claims 15-25 characterised in that the radio resource managing unit is a radio network controller (6).

27. The apparatus for controlling transmission of data bits according to any
10 of the claims 15-25 characterised in that the radio resource managing unit is a base station controller.

28. A system for controlling transmission of data bits in a bit transfer session
involving bit transfer over a wireless communications link by means of a
transport protocol with a flow control mechanism **characterised in that** the
15 system includes:

an apparatus according to any of claims 14-25, and
a radio resource managing unit (6) arranged to continuously throughout
said session send information about the bandwidth on the wireless link that
the bit transfer session currently is allowed to use to the reception means of
20 said apparatus.

29. The system for controlling transmission of data bits according to claim 27
characterised in that said system further includes a storing unit (7), in that
the radio resource managing unit (6) is arranged to send said information to
25 said apparatus via said storing unit and in that said storing unit is arranged
to relay said information from said radio resource managing unit to said
apparatus.

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